

REMARKS

Claims 1, 4 and 6-15 are pending in the present application. Claims 1, 7 and 13 are amended. Claims 2, 3 and 16 are canceled.

Claim Rejections - 35 U.S.C. § 103

Claims 1-4 and 6-16 have been rejected under 35 U.S.C. § 103(a) as being unpatentable over Kannan et al. (U.S. Patent No. 6,091,056). Applicant respectfully traverses this rejection.

Kannan et al. disclose a hot plate oven for processing flat panel displays and large wafers. During the wafer processing, hexemethyldisilane (HMDS) is added to the oven chamber under a vacuum. When the addition of HMDS is stopped, pure nitrogen is supplied to purge the oven chamber while the chamber is exhausted. (See column 3, lines 1-16).

As admitted by the Examiner, Kannan et al. fail to disclose, "increasing the pressure within the chamber to greater than or equal to atmospheric pressure by injecting a nitrogen gas into the chamber," as recited by claim 1 and similarly claim 13 as amended. To make up for this deficiency, the Examiner contends that it would have been obvious to one of ordinary skill in the art based on routine optimization.

According to MPEP 2144.05 II. B. a particular parameter must first be recognized as a result-effect variable, before the determination of the optimum or workable ranges of the variable might be characterized as routine

experimentation. Kannan et al. do not contain any discussion of any recognized parameters which affect the vapor prime process and especially that may influence changes implemented during the treatment gas evacuation process. In particular, Kannan et al. provides no discussion of any recognized problems as the vapor prime process especially any problems related to the moisture content of the chamber. (As a result, the Kannan et al. and the Examiner have not demonstrated that it is known in the art that the pressure of the chamber is one factor that may influence the amount of moisture present in the vapor prime process discussed in Kannan et al.) Therefore, it would not have been obvious to alter the pressure of the chamber when exhausting the treatment gas.

Regarding claims 6-8, Applicant respectfully disagrees that claims 6-8 are apparatus claims. Claims 6-8 merely further define the method steps of claim 1 by limiting how methods of injecting nitrogen into the chamber and evacuating a gas from the chamber are to be performed. Additionally, Applicant requests the Examiner to provide an appropriate teaching reference for claims 6-8 rather than relying on the "well known" art.

Accordingly, claims 1 and 13 are allowable over the prior art. Regarding claims 4, 6-12 and 14-15, these claims are allowable for at least the same reasons as their corresponding independent claims. Therefore, Applicant respectfully request removal of this rejection.

CONCLUSION

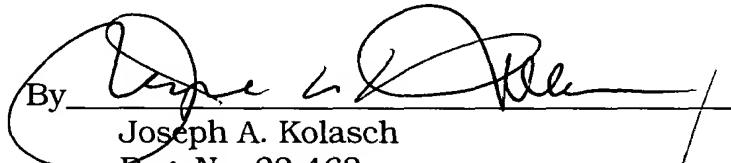
In view of the above amendments and remarks, reconsideration of the rejection and allowance of claims 1, 4 and 6-15 is respectfully requested.

If the Examiner believes, for any reason, that personal communication will expedite prosecution of this application, the Examiner is invited to contact the undersigned at (703) 205-8000, in the Washington, D.C. area.

If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies, to charge payment or credit any overpayment to Deposit Account No. 02-2448 for any additional fees required under 37 C.F.R. § 1.16 or under 37 C.F.R. § 1.17; particularly, extension of time fees.

Respectfully submitted,

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Attachments: Version With Markings Showing Changes Made



Application No. 09/725, 572

VERSION WITH MARKINGS SHOWING CHANGES MADE

IN THE CLAIMS

Claims 2, 3 and 16 have been canceled.

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TC 2800 MAIL ROOM

The claims have amended as follows:

1. (Three Times Amended) A method of preventing generation of particles in a chamber, the method comprising:

mounting a substrate within a chamber of a gas-exposure equipment;

decreasing a pressure within the chamber;

injecting a surface treatment gas into the chamber, the surface treatment gas converting a surface of the substrate into an organic material; **[and]**

increasing the pressure within the chamber to greater than or equal to atmospheric pressure by injecting a nitrogen gas into the chamber; and

[preventing moisture in air from penetrating into the chamber by drawing out the surface treatment gas from the chamber while injecting [a] the nitrogen gas into the chamber and preventing atmospheric air and moisture from penetrating the chamber.]

7. (Amended) The method as claimed in claim 6, wherein the injecting nitrogen gas into [is applied to] the chamber includes injecting the nitrogen gas through the ejection lines.

13. (Amended) A method to prevent generation of contaminating particles in a chamber, the method comprising:

evacuating an ordinary gas within said chamber;
injecting a treatment gas into said chamber to treat a surface of a substrate; [and]

increasing a pressure in said chamber to greater than or equal to atmospheric pressure by injecting a moisture displacing gas into the chamber; and

withdrawing said treatment gas from said chamber while injecting [a] the moisture displacing gas into said chamber and preventing atmospheric air from entering the chamber.